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09/725,156	11/29/2000	John D. Blake JR.	414.039	8567

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VERIZON CORPORATE SERVICES GROUP INC.  
C/O CHRISTIAN R. ANDERSEN  
600 HIDDEN RIDGE DRIVE  
MAILCODE HQEO3H14  
IRVING, TX 75038

EXAMINER

LEVITAN, DMITRY

ART UNIT PAPER NUMBER

2662

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/725,156

Applicant(s)

BLAKE ET AL.

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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Applicant's amendment, filed 11/17/04 has been entered. Claims 1-22 remain pending.

***Drawings***

1. In light of Applicant's amendment, the objection to the drawings has been withdrawn.

***Specification***

2. The disclosure is objected to because of the following informalities:

Specification does not provide adequate disclosure of PVD operation. It is unclear how PVD interact with DSL circuits. Appropriate correction is required.

***Claim Objections***

3. In light of Applicant's amendment, the objection to the claim 18 is withdrawn.

***Claim Rejections - 35 USC § 112***

4. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not provide sufficient details to enable a skilled in the art to make and use the invention because it does not adequately describe the following:

Regarding claim 1, how to complete calls from said PVDs to subscribers over respective copper loop facilities connecting said PVDs to telephone equipment of said subscribers.

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Regarding claim 1, how to convert said calls on said DSL circuits to respective analog POTS signals by and at said PVDs.

Regarding claim 4, how to install DSL at one or more remote DSLAM terminals.

Regarding claim 6, how to terminate DSL circuits at respective PVDs located at remote DSLAM terminals.

Regarding claim 10, how to provide voice telephone service to subscribers through respective PVD and NID.

The specification does not provide enough details about the structure and operation of the elements associated with the above identified claimed features to enable one skilled in the art to make and use the invention without undue experimentation.

5. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 limitation “plural DSL services between a telephone facility and a remote facility” is unclear, because plural DSL services can be interpreted as plural DSL systems between a telephone facility and a remote facility, or plural services on each DSL channel between the facilities, or plural DSL channels between the facilities.

It is not understood how to use existing telephone loop facilities to provide services between a telephone facility, as using facilities and defining them as a connection point is confusing.

***Claim Rejections - 35 USC § 103***

8. Claims 1-2, 15-17, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 6,639,913) in view of Admitted Prior Art (Application, Background Art, page 4, network interface device or NID).

6. Regarding claims 1 and 5, Frankel teaches a method for providing voice grade service to a plurality of subscribers using existing telephone loop facilities (Fig. 1 and existing copper wire pair lines 2:12-19), comprising:

Configuring said telephone loop facilities to provide plural DSL services between a telephone facility (central switching facility 30 on Fig. 8) and a remote facility (RDT 500 on Fig. 8 and 12:23-37) using respective DSL circuits (DSL lines 24 on Fig. 8 and 4:22-24);

Assigning a plurality of subscriber lines to each of the DSL circuits (lines connecting subscribers TD 10 to RDT 500 on Fig. 8);

Routing calls terminating at a central office to an associated one of said DSL circuits (from switch 32 to DSL circuit 24 between HDT 200 and RDT 100/500 9:31-52);

Transmitting calls on said DSL circuits to respective PVDs (DSL modems 120, SRAM 130, ROM 140, CODECs 160, SLICs 150 and controller 110 on Fig. 9 and 12:29-53) located at said remote facility;

Converting said calls on said DSL circuits to respective POTS signals by and at said PVDs (CODECs and SLICs converting DSL/RDT circuits into POTS signals 12:29-42);

Transmitting said POTS signals to the subscribers over respective copper loop facilities connecting PVDs to the telephone equipment of said subscribers (SLICs 150 are connected to the

customer TD 10 by a standard analog telephone line 6:1-20 and transmit POTS signals to the customers 12:32-36).

Completing calls from the PVDs to nearby ones of said subscribers (9:31-52);

Frankel does not teach using NIDs to connect the subscriber's equipment to outside network.

Admitted Prior Art teaches using NIDs to connect the subscribers equipment to outside network Application, Background Art, page 4, network interface device or NID as a demarcation point between the LEC and a subscriber).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using NIDs to connect the subscriber's equipment to outside network of Admitted Prior Art to the system of Frankel to improve the system maintenance, using NIDs as a demarcation point between the customer's equipment and LEC facilities, and to improve the system reliability, as NIDs often comprise the protection devices.

7. Regarding claim 6, Frankel teaches an existing telephone network comprising interconnected central offices providing services to nearby subscribers connected by local loop facilities including a feeder distribution system connecting the central offices to respective serving area and local drops (PSTN 42 on Fig. 1 and 8), comprising

Configuring said feeder/distribution system to provide plural DSL between said central offices and said serving area (wire center 68 and WC RDT 500 on Fig. 8 and 13:43-50);

Terminating said DSL circuits at respective PVDs (connecting DSL modems 120, SRAM 130, ROM 140, CODEC 160, SLIC 150 and controller 110 on Fig. 9, interpreted as PVD, with DSL lines 24 to remote DSLAM 64 on Fig. 8) located at remote DSLAM terminals; and

Assigning a plurality of subscriber lines to each of said DSL circuits (TD10 connected to WC RDT 500 on Fig. 8).

Transmitting said POTS signals to the subscribers over respective copper loop facilities connecting PVDs to the telephone equipment of said subscribers (SLICs 150 are connected to the customer TD 10 by a standard analog telephone line 6:1-20 and transmit POTS signals to the customers 12:32-36).

Frankel does not teach using NIDs to connect the subscriber's equipment to outside network.

Admitted Prior Art teaches using NIDs to connect the subscribers equipment to outside network Application, Background Art, page 4, network interface device or NID as a demarcation point between the LEC and a subscriber).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using NIDs to connect the subscriber's equipment to outside network of Admitted Prior Art to the system of Frankel to improve the system maintenance, using NIDs as a demarcation point between the customer's equipment and LEC facilities, and to improve the system reliability, as NIDs often comprise the protection devices.

8. Regarding claim 10 and 11, Frankel teaches a telephone system comprising:

Network switching facilities including

(i) a digital switch (ATM/data switch 62 on Fig. 1 and 4:29-36),

(ii) a DSLAM coupled to said digital switch (DSLAM 64 connected to central switching facility 30 on Fig. 1);

Local loop transmission facilities connected to the DSLAM (RDT 100 connected to DSLAM 64 through DSL 24 on Fig. 1) and

A PVD (DSL modems 120, SRAM 130, ROM 140, CODEC 160, SLIC 150 and controller 110 on Fig. 9) connected (a) to said DSLAM via local loop transmission facilities (DSL 24 on Fig. 1) and (b) to plurality of copper loops (loops 25 on Fig. 1) providing POTS service to the customers premises 12:30-36).

Frankel does not teach using NIDs to connect the subscriber's equipment to outside network.

Admitted Prior Art teaches using NIDs to connect the subscribers equipment to outside network Application, Background Art, page 4, network interface device or NID as a demarcation point between the LEC and a subscriber).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using NIDs to connect the subscriber's equipment to outside network of Admitted Prior Art to the system of Frankel to improve the system maintenance, using NIDs as a demarcation point between the customer's equipment and LEC facilities, and to improve the system reliability, as NIDs often comprise the protection devices.

9. Regarding claims 2 and 12, Frankel teaches supplying power to PVD independent from local commercial power source (12:65-67 and 13:1-2).

Regarding claim 3, Frankel teaches installing DSL at offsite near the respective group of subscribers served by DSL (RDT 100 resides at the customer site 7 on Fig. 1 and 4:18-20).



Regarding claim 4, Frankel teaches collocating DSL terminal with DSLAM (integrating WC RDT 500 and DSLAM 64 on Fig. 8 and 12:52-53), which in turn supplies service area interfaces (DSL interfaces to customer sites 7 on Fig. 8).

Regarding claim 7, Frankel teaches routing calls termination at central office to an associated DSL circuit; transmitting calls to respective PVD and completing calls to subscribers over copper loop (procedure 9:31-65).

Regarding claims 8 and 9, Frankel teaches detecting off-hook at local drop, transmitting dial tone from central office to the drop through associated DSL circuit (call-setup procedure 8:49-64 including a traditional dial tone 8:58), collecting dialed digits at central office received from local drop through DSL circuit and completing a voice call (making and receiving PSTN calls/full duplex calls in the traditional fashion 9:53-65).

Regarding claim 15, Frankel teaches a packet switch connected to said DSLAM and digital switch (data switch 62 on Fig. 1 and 4:32-36).

Regarding claims 16, 17 and 21, Frankel teaches locating PVD in a weatherproof enclosure (wire center 58 including WC RDT 500 located in a cabinet or vault, inherently weatherproofing the enclosure 13:4-8) having a plurality of line modules connected to copper loops (SLICs 150 on Fig. 9), connecting DSLAM to the digital Switch with a fiber (fibers 26 and 66 on Fig. 1 and 4:33-36, 5:15-16).

Regarding claim 22, Frankel teaches a digital switch (central switching facility 30 on Fig. 1) includes a switch module (PSTN switch 32 on Fig. 1) including a plurality of analog POTS line cards (inherently part of any switch interconnected with PSTN, because PSTN operates with POTS lines) associated with the subscribers (connecting subscribers with PSTN telephones).

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10. Claims 13, 14, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Admitted Prior Art.

Regarding claims 13 and 14, Frankel teaches the limitations of parent claim 10, including a digital switch interface with DSLAM (line 26 coupling DSLAM through data switch 62 on Fig. 1) and integrating LPN (plurality of DSLAM and data switches) with HDT.

Frankel does not teach using plurality of line cards in a digital switch and utilizing MDF for line cards and DSLAM connections with copper loops.

Official notice is taken that using plurality of line cards in a digital switch and utilizing MDF for line cards and DSLAM connections with copper loops is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use plurality of line cards in a digital switch and utilize MDF for line cards and DSLAM connections with copper loops in the system of Frankel to simplify maintenance on the switch, using replaceable line cards, and on wire connections, using main distribution frame that is present in all central offices.

Regarding claims 18 and 19, Frankel teaches the limitations of parent claim 17, including using protection circuitry on local loops (Fig. 9).

Frankel does not teach using multi-line protector block at central office and add/drop multiplexer and a digital cross connect to connect DLC to the digital switch.

Official notice is taken that using multi-line protector block at central office and add/drop multiplexer and a digital cross connect to connect DLC to the digital switch is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use multi-line protector block at central office and add/drop multiplexer with a digital cross connect to connect DLC to the digital switch in the system of Frankel to improve the system reliability and flexibility.

Regarding claim 20, Frankel teaches supplying power to PVD independent from local commercial power source (12:65-67 and 13:1-2).

### *Response to Arguments*

11. Applicant's arguments filed 11/17/04 have been fully considered but they are not persuasive.

12. Official Notices presented in the previous Office action were not challenged by Applicant and so are maintained.

13. On page 11 of the Response, Applicant argues that PVDs were adequately disclosed in the Application.

Examiner respectfully disagrees.

The specification does not provide enough details about the structure and operation of PVDs.

For example, Packet Voice device (PVD) essential function, as PVD interface with DSL circuits is not disclosed in the application.

14. On page 13 of the Response, Applicant argues that because PVD functions are well known in the art, providing the details of their operation, interfaces and installation is not necessary.

Examiner respectfully disagrees.

The attempt to incorporate subject matter into this application by a reference to PVD products is improper because essential material should be disclosed in the application.

Examiner believes that operation and structure of PVD is essential, because it is claimed in many claims of the application.

15. On page 14 of the Response, Applicant argues that claim 1 limitation “plural DSL services between a telephone facility and a remote facility” is clear.

Examiner respectfully disagrees.

Examiner believes that cited claim 1 limitation is indefinite. Claim 1 limitation “plural DSL services between a telephone facility and a remote facility” is unclear, because plural DSL services can be interpreted as plural DSL systems between a telephone facility and a remote facility, or plural services on each DSL channel between the facilities, or plural DSL channels between the facilities.

It is not understood how to use existing telephone loop facilities to provide services between a telephone facility, as using facilities and defining them as a connection point is confusing.

16. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection, necessitated by the amendment.

However, Examiner would like to clarify his position in the previous Office Action.

Regarding claim 5, Frankel teaches RDT 100 (shown on Fig. 1 and 8, 6:46-60) connected to a plurality of telephone devices TD 10. The telephone devices are connected to the RDT with a standard telephone line, inherently utilizing a protection device (NID) at the demarcation point of customer site and the local loop. Examiner never considered that RDT can satisfy the requirements for a NID.

Applicant's amendment, further limiting operation of NIDs (see amended claims 1, 6 and 10), necessitated new grounds of rejection.

Examiner therefore believes that the cited references meet all the claims limitations and the rejection is proper.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

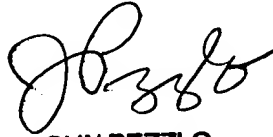
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dmitry Levitan  
Patent Examiner.  
03/22/05.



**JOHN PEZZLO**  
**PRIMARY EXAMINER**